



CITY OF BONNEY LAKE
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CROSS CONNECTION CONTROL

What is a 'cross connection'? A cross connection is a permanent or temporary piping arrangement between a potable (safe to drink) water system and a non-potable (not safe to drink) system. This can allow drinking water to become contaminated if a backflow or back siphonage event were to occur. Backflow is water flowing in the opposite direction of its normal flow such as when a pump is running that overcomes the normal system pressures. Back siphonage is a result of a negative pressure in the water system that can allow contaminated water to be siphoned into the water system. Backflow prevention devices are designed to prevent these events from occurring, and are required by law to be installed on any water system that has the potential of contaminating the public water supply.

Examples of systems requiring backflow preventers include, but are not limited to the following: irrigation systems, boiler systems, non-flow through fire suppression systems, pressure boosting systems, soda fountains, etc. Backflow prevention devices are required to be inspected and tested by a Certified Backflow Assembly Tester (BAT) on initial installation, and annually thereafter. The results of these tests are submitted to the City of Bonney Lake Cross Connection Control Inspector. The City maintains a data base of these completed inspections.

Recently the City of Bonney Lake met with representatives from DOH and Cascade Water Alliance to discuss concerns related to residential irrigation systems drawing water from sources such as lakes, ponds, or streams. Taking water from these 'auxiliary' sources is not permitted to be used for irrigation purposes due to the high risk of contaminating the drinking water supply.

The City of Bonney Lake has a Cross Connection Control Program as required by the Washington State Department of Health Drinking Water Regulations. This program is necessary to protect the high quality water that we produce. If you have questions regarding the Cross Connection Control Program, or have not received your annual inspection notification, please contact us at (253) 447-3227.

HOW TO SAVE ON WATER AND SEWER BILLS:

Both Water and Sewer charges are based on how much water you use. To save money on both, the following water conservation suggestions are offered for residential customers. It is important to minimize both daily water consumption quantity and to minimize water use during peak water use hour periods. You can find additional water conservation tips at www.wateruseitwisely.com.

INSIDE YOUR HOME

Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.

Shorten your shower by a minute or two and you'll save up to 150 gallons per month.

Install an instant water heater near your kitchen sink so you don't have to run the water while it heats up. This also reduces energy costs.

Put food coloring in your toilet tank. If color seeps into the toilet bowl without flushing, you have a leak. Replacing the flapper valve can save up to 1,000 gallons a month.

Know where your master water shut-off valve is located, just in case you have a water leak issue. Try it once a year to make sure it works. This could save water and prevent damage to your home.

OUTSIDE YOUR HOME

Use a hose nozzle or turn off the water while you wash your car. You'll save up to 100 gallons every time.

Limit grass watering to no more than three times a week with 30-minutes per sprinkler zone.

Spreading a layer of organic mulch around plants retains moisture and saves water, time and money.

Use drip irrigation for shrubs and trees to apply water directly to the roots where it's needed.

The City's customer peak demand periods for water are just before and after sunrise. We encourage customers to do the following: avoid watering grass and gardens during the day when most evaporation occurs; automated sprinkler systems should be set to use water in the late evening or very early in the morning hours.

NEW IN 2016

Water Capital Improvement Projects Total

- | | | |
|-----------|--|-------------------|
| 1. | Lakeridge Booster Pump Station #2
This project built a new water booster station which includes to booster pumps, automatic controls, and emergency backup power to supplement the 810' elevation zone. | \$ 735,156 |
| 2. | SCADA System Upgrade Phase 1
This project is a communication upgrade at the Peaking Storage Tank/Booster Station and the Central Control at Public Works Center. | \$ 30,464 |
| 3. | Grainger Springs Upgrade Phase 1
This project replaced the obsolete 1950's era emergency generator with a new diesel generator and automatic transfer switch, SCADA control system upgrades, and paving of the access road to the spring collection booster station. | \$ 806,975 |



2016 WATER QUALITY REPORT

"The City of Bonney Lake's mission is to protect the community's livable identity and scenic beauty through responsible growth planning and by providing accountable, accessible and efficient local government services."

GREETINGS FROM MAYOR JOHNSON



At the time of updating this letter, I am sure we are all a little tired of the rain and can't wait for another exciting spring season.

I am happy to report that in 2016 the City of Bonney Lake continued to produce a safe and reliable supply of drinking water which is fundamental to the high quality of life we all like to enjoy. You will note from this annual report that your drinking water continues to meet and exceed the required standards set by the U.S. Environmental Protection Agency (EPA). This "Consumer Confidence Report" is required to be sent to all our customers each year, by the EPA, through the Safe Drinking Water Act (SDWA).

Over the last number of years, the City has also been proactive in working with neighboring cities, Tacoma, and the Cascade Water Alliance to assure an affordable and reliable water supply for the next 30+ years.

This report is only one of many means the City uses to communicate with you. Other sources include the Bonney Lake Reporter placed in the Courier Herald each month, my weekly In / Out newsletter, our Facebook page, Twitter (@CityBonneyLake), our website www.ci.bonney-lake.wa.us, and periodic inserts within your utility bill.

Should you have any questions or comments about this report, feel free to contact our staff at: (253) 447-4320 or webert@ci.bonney-lake.wa.us.

Remember that we will have a variety of events this spring and summer, including our Tunes at Tapps which is every Wednesday starting in July and Bonney Lake Days which is August 18 and 19. Hope you can find time to catch one of our many events.

Thank you,

PUBLIC IMPROVEMENT

The City of Bonney Lake maintains nearly 236 miles of water mains and 1,708 fire hydrants within the Bonney Lake water service area.

In 2016 the Public Works Operations Division provided safe, quality water to 12,769 single family households, 431 multi-family residential connections, 196 commercial accounts to an estimated population of 37,000 water consumers, with a high degree of reliability.

The City water system produced over 1.3 billion gallons of water with the peak production month of August when 185.5 million gallons were produced.

In 2016 the quantity of water consumed averaged 35,070 gallons per person which equates to 96 gallons per person per day.

2017 WATER CONSUMPTION CHARGES

Water consumption is recorded by water meters in cubic feet (7.48 gallons = 1 cubic foot). Water meters are read in hundreds of cubic feet (CCF). 1 CCF = 748 gallons

Consumption Rates for Customers Inside City Limits:

Winter

0 -10 CCF per month	\$1.26	= \$0.17 per 100 gallons
Over 10 CCF per month	\$2.49	= \$0.33 per 100 gallons

Winter rates will be reflected on bills covering October 1st through May 31st

Summer

0 -10 CCF per month	\$1.26	= \$0.17 per 100 gallons
11-20 CCF per month	\$2.72	= \$0.36 per 100 gallons
21-30 CCF per month	\$3.81	= \$0.51 per 100 gallons
31 or more CCF per month	\$4.89	= \$0.65 per 100 gallons

Summer rates will be reflected on bills covering June 1st through Sept 30th

Consumption Rates for Customers Outside City Limits:

Winter

0 -10 CCF per month	\$1.82	= \$0.24 per 100 gallons
Over 10 CCF per month	\$3.62	= \$0.48 per 100 gallons

Winter rates will be reflected on bills covering Nov 1st through June 30th

Summer

0 -10 CCF per month	\$1.82	= \$0.24 per 100 gallons
11-20 CCF per month	\$3.81	= \$0.51 per 100 gallons
21-30 CCF per month	\$5.34	= \$0.71 per 100 gallons
31 or more CCF per month	\$7.46	= \$1.00 per 100 gallons

Summer rates will be reflected on bills covering July 1st through Oct 31st

Note: Current City of Bonney Lake utility rates can be found at:

www.citybonneylake.org/section_government/departments/executive/finance_utility_billing.shtml

2016 WATER QUALITY REPORT

BONNEY LAKE'S WATER SOURCE

Nine million gallons per day (MGD) of the City of Bonney Lake's drinking water is supplied by groundwater pumped from springs at Victor Falls and Grainger Springs, and well water from our Tacoma Point and Ball Park sites. Additionally, we have water supply agreements to receive another four MGD from Tacoma Public Utility (TPU). Throughout our water system, we have over 20 million gallons of water in reservoirs.

A Source Water Assessment has been performed for our area to provide baseline data about the quality of water before it is treated and distributed to customers. This is important because it identifies the origins of contaminants within our area and indicates the susceptibility of our water system to such contaminants.

To ensure that the tap water is safe to drink, the U.S. Environmental Protection Agency, through the Safe Drinking Water Act (SDWA), prescribes limits with substantial safety factors on the amount of certain contaminants in water provided by public water systems.

To ensure safe, high quality water, the Public Works Operations Division (PW-OPS) continuously monitors and samples the water quality. During the 2016 calendar year, PW-OPS took 480 routine bacteria samples, 2 bacteria samples to test new connections, and 42 engineering samples. Operators also took 12 sets of Disinfectant By-Products samples, and 4 samples for full inorganic chemicals. An independent certified laboratory tests these samples to ensure the safety of your drinking water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safety Drinking Water Hotline (800-426-4791) or visit their website at www.epa.gov/safewater/sdwa/index.html.

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, and wildlife.

- **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

- **Pesticides and herbicides** (synthetic organic chemicals), which may come from a variety of sources such as agriculture, stormwater runoff, and residential uses. Of the 93 synthetic organic chemicals tested, no contaminants were detected.

- **Organic chemicals**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum products, can also come from gas stations, urban storm water runoff and septic systems. We test for volatile organic chemicals every three years.

- **Radioactive contaminants**, while unlikely, can be naturally occurring or be the result of oil and gas productions and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. No radioactive materials were detected in Bonney Lake's water.

LEAD IN DRINKING WATER

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Bonney Lake is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

SPECIAL HEALTH CONCERNS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons include, but are not limited, to persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, and some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. The EPA/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If these issues are noticed on a regular basis, you can contact the Public Works Operations office at (253) 447-3101 for more information.

The primary sources of disease causing organisms will be from pets, food, general household cleanliness and personal hygiene. The risks of infection by Cryptosporidium or Giardia in your water supply are remote, as these organisms are not typically found in ground water sources such as those that supply the City of Bonney Lake system.

CHLORINE DISINFECTION

Chlorine is added to Bonney Lake's water as a disinfectant to protect consumers from possible disease causing microorganisms.

- **Chlorine Residuals.** The state mandates a minimum chlorine residual level of 0.2 parts per million (ppm) throughout the water distribution system.

- **Chlorine Disinfection By-Products.** When chlorine combines with organic material, it will form chlorine by-products known as Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). Systems with high amounts of organic material usually draw their water from surface water sources, such as rivers and lakes. Our water sources are groundwater sources, such as wells and springs. We typically have low amounts of organic material in our water therefore having low amounts of disinfection by-products.

COMMON WATER QUALITY ISSUES

Cloudy or White Water

On occasion, there may be a chlorine odor or temporary milkiness to the water (the milky appearance is caused by nitrogen or air in the water supply source). This is not a health hazard. If you pour the water in to a glass and let it sit for a minute the cloudiness will clear from the bottom upwards. This is most likely to occur from July through September.

Brown Water

Brown or reddish brown water comes from internal pipe rust and sediment getting stirred up, possibly from a fire hydrant being used or a sudden change in the direction of flow. This is not a health hazard. We recommend customers wait until it clears before drinking it. The water should clear on its own. Try running the cold water for a few minutes to see if it is clearing or still discolored. If the water does not clear up, let the water sit for an hour. Then run the water for a few minutes and flush the toilet a couple of times.

Yellow Water

When The City of Bonney Lake purchases water from Tacoma Public Utilities you may notice a slight yellow color in the water. This is not a health hazard. This is caused by dissolved minerals, iron and manganese, in the water interacting with the chlorine and ozone disinfection treatment. This is most likely to happen in the late summer months.

2016 TEST RESULTS

The water quality table below shows substances we detected in our water system as well as the water we purchased from Tacoma Public Utilities.

Substance	MCL	Highest Level Detected	Range of Detection	Regulation Met	Potential Source
EPA Regulated					
Chlorine	4 ppm	1.20 ppm	0.30-1.20 ppm	Yes	Added Disinfectant
Haloacetic Acids	60 ppb	9.5 ppb**	0-9.5 ppb**	Yes	By Product of disinfection
Nitrate	10 ppm	4.5 ppm	Less than 0.1-4.5 ppm	Yes	Septic Systems, Agricultural Uses
Total Trihalomethanes	80 ppb	22 ppb**	0.9-22 ppb**	Yes	By Product of disinfection
WA DOH Regulated					
Fluoride*	4 ppm	1.77 ppm**	0.02-1.77 ppm**	Yes	Treatment Additive
Hardness	NA	108 ppm	49-108 ppm	Yes	Erosion of Natural Deposits
Sodium	NA	13 ppm	7-13 ppm	Yes	Erosion of Natural Deposits
Turbidity	5 NTU	0.79 NTU**	0.024-0.79 NTU**	Yes	Soil Erosion, Pipe Sediment
Lead and Copper Monitoring Result					
Substance	Action Level	90th Percentile	Samples above AL	Regulation Met	
***Copper	1.3 ppm	0.95 ppm	2 of 38	Yes	
***Lead	0.015 ppm	0.003 ppm	0 of 38	Yes	

* Tacoma Supplied Water ** Tacoma Sample Results ***Lead & Copper Test Results were from 2015 Required Monitoring

Key to Table

MCL = Maximum (allowable) Contaminant Level set by the federal government
 ppm = Parts per million
 ppb = Parts per billion
 Umhos/cm = micromhos per centimeter
 NTU = Nephelometric Turbidity Unit (Water Clarity)
 AL = Action Level
 EPA = Environment Protection Agency
 WA DOH = Washington State Dept of Health
ND = Not Detected

CITY OF BONNEY LAKE WATER AVAILABILITY

Victor Falls	1,100 gpm (gallons per minute)
Grainger Springs	1,500 gpm
Ball Park #1	1,000 gpm
Ball Park #2	270 gpm
Tacoma Point. #2, #4, #6	2,300 gpm
Total Owned by City	6,170 gpm = 8,884,800 gpd (gallons per day)
Tacoma Water/Cascade Water Alliance Agreement	2,178 gpm = 4,000,000 gpd
Total Water Available	8,348 gpm = 12,884,800 gpd

SPECIAL NOTICE: MONITORING WAIVER

In 2016 the City of Bonney Lake Water system was granted a Nitrate Monitoring Waiver by the Department of Health. The City requested this waiver when the motor on the main production well at the Ball Park Well Field failed prior to when the scheduled annual sample was collected. City staff immediately notified the regulatory staff at the Washington State Department of Health (DOH) when it became apparent that the replacement motor would not be in place before the end of the 2016 pumping season. DOH staff reviewed the City's past compliance with regulatory monitoring, the historical results from past monitoring, and granted the City the Monitoring Waiver. All previous Nitrate results from this source have been well below levels deemed to be a public health risk and are well within the parameters of the Safe Drinking Water Act standards. City staff take the responsibility of providing a safe, reliable drinking water supply to the citizens they serve very seriously. If you have questions or concerns regarding this information, please contact us at: (253) 447-4312 or cihacd@ci.bonney-lake.wa.us.